

Aetiologies after newborn hearing screening

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INTRODUCTION:

Most developed countries have implemented some form of universal newborn hearing screening program. Identification and rehabilitation of hearing loss have evolved to an acceptable standard, and the need for identification of the cause of hearing impairment has become clear.

METHODS:

From May 2006 until June 2013, 396 neonates were referred to our tertiary referral center (ENT department, University Hospital Ghent) after failing neonatal hearing screening with automated auditory brainstem responses. Extensive audiometric testing was performed to confirm and determine the type and grade of hearing loss. In case of permanent hearing loss, a standardised etiological protocol was followed to determine the cause of hearing loss.

RESULTS:

Of the 396 referred newborns (42.9% unilateral, 57.1% bilateral), hearing loss was confirmed by diagnostic ABR in 314 patients (79.3%). Main causes include otitis media with effusion (47.4%), a genetic disorder (15.6%, mainly GJB2), congenital cytomegalovirus infection (7.3%) and atresia/stenosis of the external ear canal (5.9%). However, in 17.0% no cause could be identified. Bilateral involvement occurred in 50% of the patients with otitis media, in 87% of the genetic causes, in 67% of the cCMV group and in 12% of the atresia group. Mean threshold was 42dB in newborns with otitis media and 66dB in atresia patients, whereas 40% and 49% of the ears in the genetic and cCMV group respectively initially presented with profound hearing loss.

CONCLUSION:

In around 80% of all children referred after universal neonatal hearing screening a cause of hearing loss could be identified.